

PD Status and Plans (from Bob Kephart Presentation)

Charge by Director to Bill Foster, Steve Geer to prepare CD0 documentation by end of CY04

FLRPC meetings machine design & physics meetings

1. AD, TD, PPD all have significant involvement

2. Meeting include:

1. PD Physics working groups
2. RF design and Beam dynamics
3. Cryogenics issues
4. Civil and Siting
5. Accelerator Physics Issues (e.g. H- stripping, etc.)
6. In the future... workshop, Cost & Schedule estimates, etc.

Goal is to complete the required R&D and establish a baseline design in the next year

Enthusiasm! Lots of people joining the effort ~ 40-50

PD Physics Study

- 7 working groups
 - Neutrino Oscillations
 - Neutrino Interactions
 - Muons
 - Kaons and Pions
 - Antiprotons
 - Tevatron Collider
 - Neutrons
- See <http://www-td.fnal.gov/projects/PD/Physics.html> for more

Task and Schedule

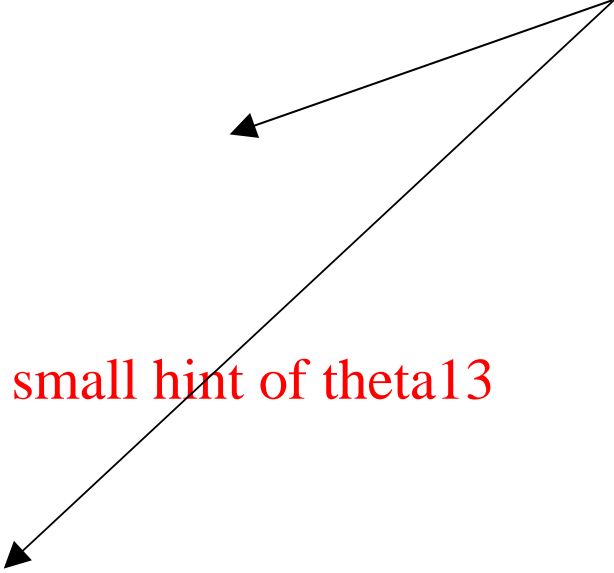
- Two Tasks
 - Produce documentation needed for CD0 by end of CY04
 - Start to build a community behind the PD
- Timeline for neutrino osc. working group
 - **Now to workshop**: discuss options and start to outline document table of contents
 - **October 6-9: Workshop**: leave workshop with fixed table of contents and sections fully assigned to authors
 - **Mid November**: deadline for section authors
 - **End November**: first draft
 - **End December**: final version
- Short timescale:
 - Explore options, but stay focused on the writing task

Tentative First Draft of Table of Contents

- 1) Intro, purpose, and explanation of chapter layout
- 2) Osc theory summary
- 3) Current knowledge of neutrino properties and description of where we may be in 10 years time
 - a) Summary of current parameter knowledge
 - b) Describe experiments that have yet to release results, but will have in 10 years time.
 - c) Scenarios for where we may be in 10 years time
 - i. Theta13 clearly non-zero
 - ii. Theta13 consistent with zero or small hint of theta13
 - iii. Mass heirarchy measured
 - iv. LSND oscillation confirmed by MiniBooNE
 - v. Some new physics signal

Tentative First Draft of Table of Contents (cont.)

Not the right way
to divide the experiments.
What is the right way?



4) **Theta13 clearly non-zero**

- a) Nova II
- b) Other off-axis
- c) ...

5) **Theta13 consistent with zero or small hint of theta13**

- a) FeHo
- b) Broadband BNL scheme
- c) FNAL to China
- d) ...

6) **Mass heirarchy measured**

- a)

Tentative First Draft of Table of Contents (cont.)

7) LSND oscillation confirmed by MiniBooNE

- a) Decay at rest source
- b) ν_{μ} to ν_{τ}
- c)

8) Some new physics signal

- a)

9) Steps Beyond

- a) Betabeam
- b) Neutrino Factory

10) Summary